## IN THE CLAIMS

1. (Currently Amended) A method ~~Method~~ of optimizing ~~optimising the~~ a size of coded data blocks intended to be subjected to an iterative decoding process, ~~characterised in that,~~ wherein a maximum acceptable error rate ~~at the output~~ of the iterative decoding ~~being~~ process is fixed in advance, ~~the method seeks~~ comprising:

determining a submultiple block size ~~amongst~~ among a plurality of integer block sizes ~~(N/k),~~ which are submultiples of ~~the normal~~ an integer block size $\underline{N}$ by an integer factor ~~(k)~~ greater than or equal to 1, wherein k is a factor of N; and

determining a maximum number of iterations among a plurality of integers ~~giving the~~ corresponding to a maximum number of iterations $(n_{iterations}^{(k)})$ ~~which can be effected~~ to be applied by the ~~said~~ iterative decoding process on a coded data block, ~~a submultiple size and a maximum number of iterations,~~ based on ~~such that they are compatible with~~ the ~~said~~ maximum error rate, and such that a mean number of iterations $(\overline{n}_{iterations}^{(k)})$ ~~which would be effected~~ that will be applied by the iterative decoding process on ~~a~~ the submultiple ~~sized~~ block size is ~~as low as possible~~ minimized.

2. (Currently Amended) The optimization ~~Optimisation~~ method according to Claim 1, ~~characterised in that~~ wherein, ~~for a size which is a multiple by a given factor k and a given maximum number of iterations~~ $(n_{iterations}^{(k)})$, the ~~said~~ mean number of iterations $(\overline{n}_{iterations}^{(k)})$ is determined as a function of ~~the signal-to-noise~~ a signal-to-noise ratio as the mean value of the number of iterations ~~which would~~ that will be ~~effected~~ applied by the iterative decoding process for each block in a succession of blocks of said submultiple size, the iterations being stopped (1) if the block of said submultiple size satisfies a predetermined reliability criterion, or (2) if the number of iterations for ~~this~~ the block attains the ~~said~~ given maximum number of iterations.

3. (Currently Amended) ~~Optimisation~~ The optimization method according to Claim 1 ~~or 2, characterised in that said~~ wherein mean numbers of iterations for different submultiple sizes, different maximum numbers of iterations, and different signal-to-noise ratios are stored in a table.

4. (Currently Amended) ~~Optimisation~~ The optimization method according to Claim 3, ~~characterised in that~~ wherein the table is updated ~~as~~ based on results of the iterative decoding ~~continues~~ process.

5. (Currently Amended) ~~Optimisation~~ The optimization method according to Claim 3 ~~or 4, characterised in that~~ wherein the mean numbers of iterations are obtained by interpolation from values available in the table.

6. (Currently Amended) ~~Optimisation~~ The optimization method according to ~~one of the preceding claims~~ claim 1, ~~characterised in that the search is limited to the~~ wherein the step of determining a submultiple block size comprises:

determining the integer factor k among integers ~~which~~ that have a value higher than a predetermined value ~~(~~$k_{min}$~~)~~.

7. (Currently Amended) ~~Optimisation~~ The optimization method according to ~~one of the preceding claims, characterised in that, prior to the search, it determines~~ to claim 1, wherein the step of determining the maximum number of iterations comprises:

determining the maximum number of iterations $\overline{(n_{iterations}^{(k)})}$ ~~for a block of normal size,~~ compatible with a predetermined maximum decoding time, ~~and in that the~~ wherein a ~~the~~

search ~~amongst~~ among said plurality of submultiple block sizes ~~(N/k)~~ and said plurality of integers is limited to ~~the~~ values such that the mean number of iterations $\overline{(n_{iterations}^{(k)})}$ ~~which~~ ~~would~~ that will be ~~effected~~ applied by the iterative decoding process on a block of said submultiple size is less than said maximum number of iterations $(n_{iterations}^{(k)})$.

8. (Currently Amended) ~~Method~~ A method for the iterative decoding of coded data blocks, the coded data blocks having an initial size, ~~characterised in that~~ the method comprising:

determining an optimum block size and a maximum number of iterations associated with ~~this~~ the optimum block size ~~are determined~~ by ~~means of~~ the optimisation method of claim 1 ~~according to one of the preceding claim and in that,~~;

partitioning the coded data of a block of initial size ~~having been coded~~ as a sequence of sub-blocks of optimum size [[,]];

decoding the sub-blocks ~~are decoded~~, one by one, by a succession of iterations of the iterative decoding process, the iterations being stopped for ~~a~~ one of the sequence of sub-blocks if (1) a predetermined reliability criterion is satisfied, or (2) if the number of iterations attains the ~~said~~ maximum number of iterations associated with the ~~said~~ optimum block size.

9. (Currently Amended) ~~Method~~ A method for ~~the~~ an iterative decoding of coded data blocks, the coded data blocks having an initial size, ~~characterised in that~~ comprising:

determining an optimum block size and a maximum number of iterations associated with ~~this~~ the optimum block size ~~are determined~~ by ~~means of~~ the optimisation method ~~according to one of the preceding claims~~ of claim 1, ~~and in that,~~;

partitioning the coded data of a block of initial size ~~having been coded~~ as a sequence of sub-blocks of optimum size~~,~~;

decoding the sub-blocks ~~are decoded~~ by successively ~~effecting~~ applying, on each sub-block, an iteration of the iterative decoding process, ~~an~~ the iteration not being ~~effected~~ applied for a sub-block (1) if a predetermined reliability criterion is satisfied, or (2) if the number of iterations reaches the maximum number of iterations associated with the ~~said~~ optimum block size.

10. (Currently Amended) ~~Device~~ A device for ~~the~~ an iterative decoding of blocks of data coded by a turbocoder, ~~characterised in that it has~~ comprising:

means for implementing the optimisation method according to ~~one of Claims 1 to 7~~ claim 1, ~~the~~ said means sup lying an optimum block size and a maximum number of iterations per block of optimum size, ~~the device also comprising~~ ; and

means for transmitting the optimum block size ~~information~~ to the turbocoder.

11. (Currently Amended) ~~Coding/decoding~~ A coding/decoding system comprising:
turbocoder ~~adapted~~ configured to code blocks of data; and
an iterative decoding device according to Claim 10 ~~adapted~~ configured to decode the blocks of data coded by the turbocoder, the ~~latter~~ iterative coding device further comprising means for receiving the ~~said~~ optimum block size ~~information~~ and for modifying the size of at least one internal interleaver according to the ~~said information~~ received optimum block size.

12. (Currently Amended) ~~Device~~ A device for coding blocks of data, ~~characterised in that it has~~ comprising:

means for implementing the optimisation method ~~according to one of Claims 1 to 7~~ of Claim 1, ~~the~~ said means supplying an optimum block size, ~~the device also comprising~~ ; and

means for adaptively modifying the size of the coded data locks according to ~~the~~ said

optimum block size.


13. (Currently Amended)  ~~Device~~ <u>A device</u> for ~~the~~ turboequalisation of blocks of data

coded by a coder and modulated, ~~characterised in that it has~~ <u>comprising:</u>

means for implementing the optimisation method ~~according to one of Claims 1 to 7~~ <u>of</u>

<u>Claim 1</u>, ~~the~~ said means supplying an optimum block size~~, the device also comprising:~~ <u>and</u>

means for transmitting <u>the</u> optimum block size ~~information~~ to the coder.